1 INTRODUCTION

Bangor Hydro-Electric Company (BHE)

BHE is an electric utility wholly owned by Emera, Inc. BHE serves a population of 192,000 in eastern and east-coastal Maine and provides electricity transmission and distribution service to 107,000 customers. BHE is a member of the New England Power Pool (NEPOOL) and is interconnected with other New England utilities to the south and with New Brunswick Power Corp. (NB Power) to the north. The BHE Web site is located at http://www.bhe.com.

Executive Order (E.O.) 10485 (September 9, 1953), as amended by E.O. 12038 (February 3, 1978), requires that a Presidential permit be issued by the U.S. Department of Energy (DOE) before electric transmission facilities may be constructed, operated, maintained, or connected at the U.S. international border. Bangor Hydro-Electric Company (BHE) has applied to DOE to amend Presidential Permit PP-89, which authorizes BHE to construct a single-circuit, 345,000-volt (345-kV) alternating-current (AC) electric transmission line across the U.S. international border in the vicinity of Baileyville, Maine.

The proposed transmission line would originate at the existing Orrington Substation, located in Orrington, Maine, and extend eastward to the international border between the United States and Canada near Baileyville, Maine, where it would connect with a transmission line to be constructed, operated, and maintained by New Brunswick Power Corporation (NB Power). DOE has determined that an amendment to the Presidential permit would constitute a major Federal action that may have a significant impact on the environment within the meaning of the National Environmental Policy Act of 1969 (NEPA). For this reason, DOE has prepared this environmental impact statement (EIS) to address potential environmental impacts from the proposed action and the range of reasonable alternatives.

1.1 BACKGROUND

In 1970, Maine Electric Power Company (MEPCO), a partnership of Central Maine Power Company, Maine Public Service Company, and BHE, placed in service a 345-kV transmission interconnection with NB Power. The BHE system now comprises about 600 mi (966 km) of transmission line corridors, including the MEPCO 106-mi (171-km) 345-kV transmission line that interconnects the Orrington Substation with NB Power's system and that crosses the border near Orient, Maine.

On December 16, 1988, BHE applied to DOE for a Presidential permit to construct and operate a second 345-kV transmission line to New Brunswick, Canada, that would extend eastward 84 mi (135 km) from the Orrington Substation to the U.S.-Canada border near Baileyville, Maine. The route was referred to as the Stud Mill Road Route. At the border, the proposed transmission line was to connect with a transmission line to be built, operated, and owned by NB Power. DOE published a notice of that application in the *Federal Register* on January 19, 1989 (Volume 54, page 2201 [54 FR 2201]), and a "Notice of Intent to Prepare an

Environmental Impact Statement and to Conduct Public Scoping Meetings" in the *Federal Register* on May 22, 1989 (54 FR 22006). DOE decided to grant Presidential Permit PP-89 in August 1995, DOE published an EIS titled *Construction and Operation of the Proposed Bangor Hydro-Electric Company's Second 345-kV Transmission Tie Line to New Brunswick* (DOE 1995). DOE decided to grant Presidential Permit PP-89 in a Record of Decision (ROD) signed on January 18, 1996 (62 FR 2244), and issued the Permit on January 22, 1996.

In addition to the Presidential permit, the BHE transmission line required regulatory approval from the State of Maine. BHE received its original State permit for the Stud Mill Road Route in 1992 and was granted State permit extensions in 1994 and 1996. In 1999, a natural gas transmission line was constructed by Maritimes & Northeast Pipeline, L.L.C. (M&N) in the same general vicinity of Stud Mill Road and BHE's approved electric transmission line route. In 2001, BHE requested a third State permit extension. The Maine Board of Environmental Protection (MBEP), Maine's primary environmental review entity, conducted a public hearing process and indicated, in a draft order, a preference for BHE to use a route different from the Stud Mill Road Route, one that would be more closely consolidated with established linear corridors. This order was never finalized because BHE withdrew the request for an extension of the State permit. On May 10, 2005, BHE applied to the Maine Department of Environmental Protection (MDEP) for new permits under the Site Location of Development Act, the Natural Resources Protection Act, and Section 401 of the Clean Water Act (CWA).

On September 30, 2003, BHE applied to DOE to amend Presidential Permit PP-89 for a modification of the previously authorized

Northeast Reliability Interconnect Project Time Line

- 1970: MEPCO and BHE placed in service a 106-mi (171-km)-long 345-kV interconnection with NB Power.
- December 1988: BHE applied to DOE for a second 345-kV line from the Orrington Substation to the U.S.-Canada border near Baileyville, Maine.
- 1992: BHE received the State permit for the proposed line referred to as the "Stud Mill Road Route."
- December 1993: DOE published a draft EIS for the proposed line.
- 1994: The State granted a permit extension.
- August 1995: DOE issued the final EIS for the proposed line.
- January 1996: DOE issued a ROD and Presidential Permit PP-89 for the proposed line.
- 1996: The State granted a second permit extension.
- 1999: The M&N natural gas pipeline was built near Stud Mill Road.
- 2001: BHE requested a third State permit extension; request subsequently withdrawn.
- September 2003: BHE applied to DOE to amend PP-89.
- November 2, 2004: DOE published a Notice of Intent to conduct an EIS for the proposed PP-89 amendments.
- November 17–18, 2004: DOE held scoping meetings in Maine for the EIS.
- May 10, 2005: BHE applied for a new State permit.
- August 2005: DOE issued a draft EIS for PP-89 amendments (this document).

transmission line route (Devine Tarbell & Associates, Inc. 2003).[1] DOE published a notice of that application in the *Federal Register* on October 29, 2003 (68 FR 61659). The proposed transmission line project (now referred to as the Northeast Reliability Interconnect [NRI]) that is the subject of this EIS differs from the original project in the proposed route between the Orrington Substation and the international border crossing near Baileyville, Maine. This proposed project also differs from any of the routes analyzed in the 1995 EIS. In the United States, the applicant's preferred transmission line route (referred to as the Modified Consolidated Corridors Route) would be about 85 mi (137 km) long. Figure 1.1-1 shows the locations of the Modified Consolidated Corridors Route (the proposed route), the Previously Permitted Route (the Stud Mill Road Route), the existing MEPCO 345-kV transmission line, and substations that would need to be modified. In Canada, the NB Power transmission line would continue for almost 60 mi (96.6 km) to the substation at the Point Lepreau Nuclear Generating Station via Keswick, a town north of Fredericton.

1.2 PURPOSE AND NEED

1.2.1 DOE's Purpose and Need

The purpose and need for DOE's action is to respond to BHE's request to amend Presidential Permit PP-89. DOE may issue or amend a Presidential permit if it determines that the action is in the public interest and after obtaining favorable recommendations from the U.S. Departments of State and Defense. In determining whether issuance or amendment of a permit for a proposed action is in the public interest, DOE considers the environmental impacts of the proposed project pursuant to NEPA, the project's impact on electric reliability by ascertaining whether the proposed project would adversely affect the operation of the U.S. electric power supply system under normal and contingency conditions, and any other factors that DOE may consider relevant to the public interest.

If DOE determines that granting or amending a Presidential permit would be in the public interest, the information contained in the EIS would provide a basis upon which DOE would decide which alternative(s) should be implemented and which mitigation measures, if any, would be appropriate for inclusion as a condition of the permit. A decision, in the form of a ROD, can be issued no sooner than 30 days subsequent to the U.S. Environmental Protection Agency's (EPA's) publication of a "Notice of Availability of the Final EIS" in the *Federal Register*. The issuance of the Presidential permit or permit amendment would occur simultaneously with or subsequent to the ROD.

Because the proposed project also would involve the export of electric energy from the United States, BHE must obtain a separate electricity export authorization from DOE under

[1] The application to DOE to amend Presidential Permit PP-89 did not specify a preferred route; however, BHE subsequently advised DOE of its selection of the Modified Consolidated Corridors Route as the applicant's preferred route.

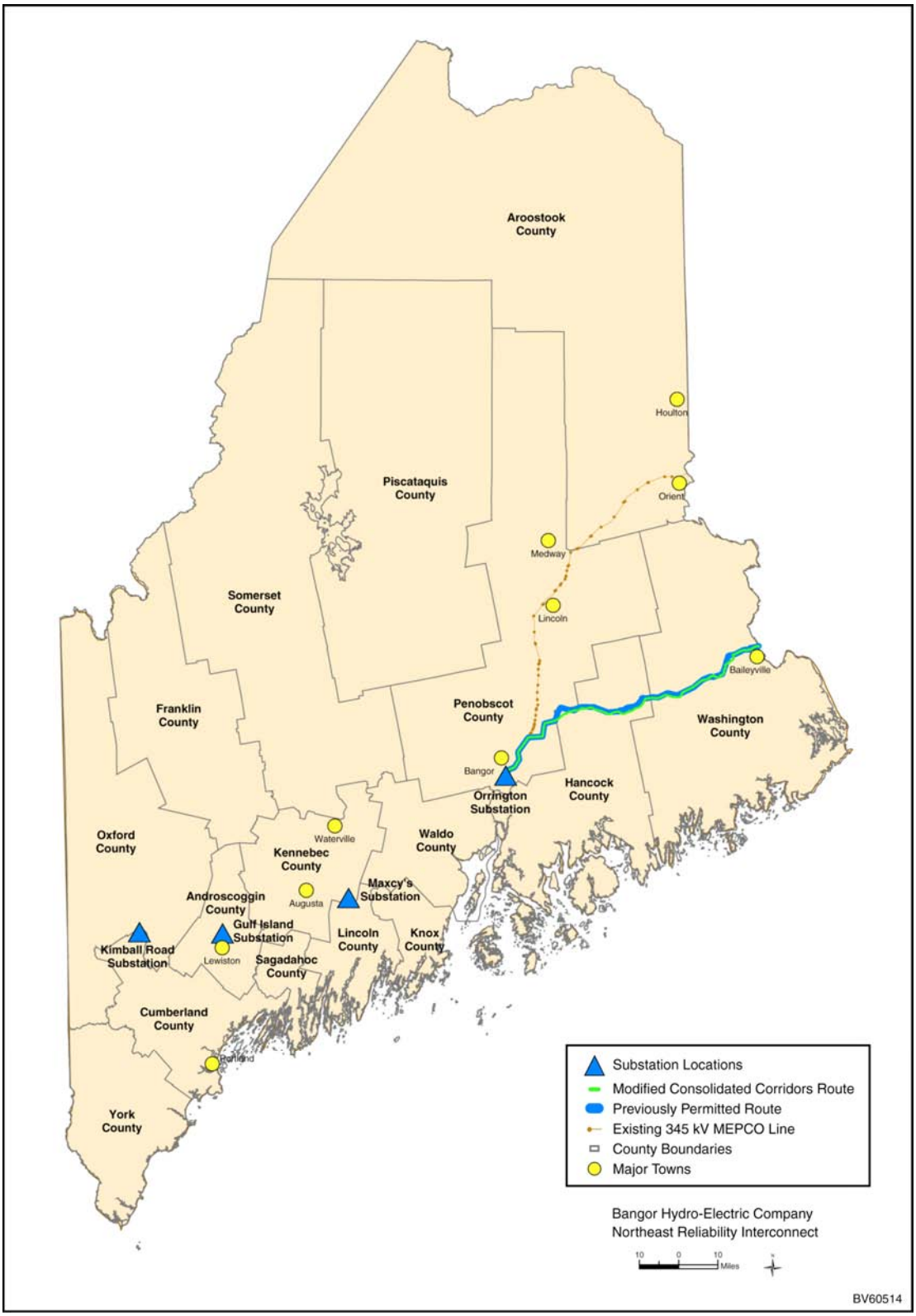

FIGURE 1.1-1 Locations of the Modified Consolidated Corridors Route, Previously Permitted Route, Existing MEPCO 345-kV Transmission Line, and Substations That Would Require Modification

Section 202(e) of the Federal Power Act before it could export electricity to Canada over the proposed 345-kV transmission line. DOE may authorize electricity exports to a foreign country if it determines that the proposed export would not impair the sufficiency of electric power within the United States and that it would not impede, or tend to impede, the coordination of regional transmission facilities. DOE also must comply with NEPA prior to authorizing electricity exports. Therefore, this EIS also will serve to satisfy DOE's NEPA responsibilities in determining whether to authorize exports over the proposed international transmission line.

1.2.2 Applicant's Purpose and Need

The following material reflects the views of the applicant regarding the merits of the proposed project:

BHE's stated purpose for the NRI is to improve the reliability and stability of the bulk electric transmission system of both the Maritimes area of Canada (New Brunswick, Nova Scotia, and Prince Edward Island) and New England, increase the import-export transmission capacity between Maine and New Brunswick, and reduce costly line losses.

About Reliability

Transmission system reliability incorporates dependability and security. Dependability relates to the continuity of electricity to customers. In the event of equipment failure, system security ensures that system failures are localized and that significant long-term damage is minimized (Central Maine Power 2005).

Independent System Operator New England (ISO NE)

Maine's bulk electrical system is operated by ISO NE, the not-for-profit corporation responsible for day-to-day reliable operation of New England's bulk power generation and transmission system. ISO NE is the Regional Transmission Operator. ISO NE is also responsible for the oversight and fair management of the region's wholesale electricity marketplace, as well as a comprehensive regional bulk power system planning process. The Northeast Reliability Interconnect (NRI) is included in ISO NE's Regional Transmission Expansion Plan, which includes projects that have been approved by ISO NE and New England Power Pool (NEPOOL) stakeholders as the priorities for maintaining system reliability.

The NRI would increase the north-to-south (New Brunswick to Maine) transfer capacity by 300 megawatts (MW) (700-MW capacity exists currently). The NRI also would increase a south-to-north (Maine to New Brunswick) transfer capacity to 400 MW on a more consistent basis than provided by the existing single tie-line. The transfer capacity of the present single tie-line to export power from Maine to New Brunswick ranges from zero to 150 MW, depending upon specific system conditions, including which generation units are in use. The NRI would thus enhance the sharing of generation capacity between the Maritimes and New England, thereby reducing reserve generation requirements, increasing the reliability of the overall transmission system, and allowing for expanded exports of energy to the Maritimes from the New England Power Pool (NEPOOL). This also would allow for long-term contracts for export energy and may allow utilities that are not directly connected to the U.S. electric grid (e.g., Eastern Maine Electric Cooperative [EMEC]) access to market-based power. The opportunity for NEPOOL to export power would most likely occur in the winter months during the Maritimes' period of peak demand. During

New England's peak summer use, Canada has surplus generating capacity that could be sold in the New England market. Increased trading of power would help balance supply with demand and increase the reliability of bulk electric transmission.

The proposed transmission line also would reduce transmission line losses in the overall regional system. Transmission line loss is electrical energy lost through heat as electricity flows through a wire. Such losses are inefficient and require production of more electricity to compensate for line losses. Line losses increase with distance and the amount of power sent through a line.

1.3 PUBLIC PARTICIPATION AND THE NEPA PROCESS

1.3.1 Cooperating Agencies

In accordance with the regulations implementing the procedural provisions of NEPA, specifically the *Code of Federal Regulations*, Title 40, Part 1501.6 (40 CFR 1501.6), DOE invites an agency to participate in the preparation of an EIS, either as a contributor in its area of expertise or as a cooperating agency, to ensure that any jurisdiction it may have by law will be adequately addressed in the document. The U.S. Department of the Interior's U.S. Fish and Wildlife Service (USFWS) and the U.S. Department of Commerce National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) are cooperating agencies in DOE's EIS preparation but have no decisions to make based on it.

1.3.2 Public Scoping

DOE issued the "Notice of Intent to Prepare an Environmental Impact Statement and to Conduct Public Scoping Meetings and Notice of Floodplain and Wetlands Involvement; Bangor Hydro-Electric Company" in the *Federal Register* on November 2, 2004 (69 FR 63514). DOE also placed announcements in local newspapers. A project Web site maintained for DOE by Argonne National Laboratory (ANL) provides background information on the proposed project, including DOE's NEPA process (http://web.ead.anl.gov/interconnecteis). This site is regularly updated as the preparation of the EIS progresses. DOE planned three public scoping meetings at Maine locations on November 17 (Baileyville) and November 18 (Lincoln and Brewer), 2004. No members of the public attended the Lincoln meeting; thus, no official records or transcript were made. Transcripts of the Baileyville and Brewer meetings are available at the Web site referenced above. In all, three individuals presented oral comments at the two public scoping meetings.

DOE also solicited written and electronic comments on the scope of the EIS in the Notice of Intent, at the scoping meetings, and electronically through the Web site. Three submissions of written comments were received during the scoping period, which closed on December 2, 2004.

The following issues were raised and are addressed in this EIS:

- The EIS should evaluate the impact of the project on bald eagles (*Haliaeetus leucocephalus*) that nest or feed within the general vicinity of the proposed transmission line corridor.

- The EIS should evaluate impacts on fish habitats, particularly identified Atlantic salmon (*Salmo salar*) streams and other water bodies that provide appropriate habitat that is or could be used by the Atlantic salmon, including impacts from transmission line construction, installation of AC mitigation for the M&N gas pipeline, and removal of forest vegetation where corridors cross streams.

- The EIS should carefully consider the temporary and permanent impacts of the proposed project on wildlife habitats, including impacts of habitat alteration and fragmentation, particularly on sensitive forest-interior bird species, and the effects of noise and disturbance, particularly on nesting birds in wetland areas.

In addition, commentors stated that the NRI would provide socioeconomic benefits to eastern Maine and the region (New England); for example, it would foster new business development and expansion in eastern Maine.

1.3.3 Issues outside the Scope of the EIS

Impacts of the Canadian transmission line that would connect to the NRI are outside the scope of this EIS. NEPA does not require an analysis of environmental impacts that occur within another sovereign nation that result from actions approved by that sovereign nation. E.O. 12114 was issued on January 9, 1979 (44 FR 1957). The E.O. requires Federal agencies to prepare an analysis of significant impacts from a Federal action in certain defined circumstances and exempts agencies from preparing analyses in others. The E.O. does not require Federal agencies to evaluate impacts outside the United States when the foreign nation is participating with the United States or is otherwise involved in the action (Section 2-3[b]).

In addition, the proposed Federal action is not an action that, for purposes of E.O. 12114, would require analysis of impacts outside the United States, as it would not affect the global commons (e.g., outer space or Antarctica); would not produce a product, emission, or effluent that is "prohibited or strictly regulated by Federal law in the United States because its toxic effects on the environment create a serious public health risk," or which involves regulated or prohibited radioactive materials; and would not significantly affect natural or ecological resources of global importance designated for protection under Executive Order by the President.

The Federal action evaluated in this EIS is only to permit the transmission line to cross the U.S. border. Limiting NEPA reviews to the U.S. portion of the transmission line interconnection (1) is consistent with applicable Federal laws, including the generally held legal

presumption that Acts of Congress do not ordinarily apply outside U.S. borders; (2) avoids the appearance of the assertion of extraterritorial control over actions that were approved by and occur within the lands of another sovereign nation; and (3) prevents interference in the foreign relations of the United States. The scope of the NEPA review is particularly appropriate here, because the transmission line to be built in New Brunswick has both been reviewed for the environmental impacts of the project and has been approved by Canada (the foreign sovereign).

Other topics outside the scope of this EIS are as follows:

- The development of emergency outage response plans, which is the purview of local public safety officials.

- The proposed transmission line presents no greater target for terrorists than any other high-voltage transmission line in the United States. Therefore, homeland security issues are not addressed in this EIS. A good general discussion of this subject can be found at http://www.globalsecurity.org/security/intro/power.htm and at http://www.globalsecurity.org/security/library/congress/2003_h/030904-gilbert.htm.

NB Power prepared an environmental impact assessment (EIA), a supplemental information report, and a comprehensive study report on the potential impacts of the proposed Canadian portion of the transmission line interconnection (AMEC 2001a,b; 2002). The Canadian EIA is equivalent to an EIS prepared under NEPA for a U.S. project and is subject to review by various provincial and Federal agencies in Canada, as well as by the public. The entire document can be found on the Web at http://transmission.nbpower.com/en/regulatory/EIA.html. The New Brunswick transmission line project has been approved and licensed by the National Energy Board of Canada (NEB 2003). For details, see http://transmission.nbpower.com/en/intlpowerline/nebipldec.pdf.

1.4 ORGANIZATION OF THIS ENVIRONMENTAL IMPACT STATEMENT

This NRI Draft EIS is organized as follows:

- Chapter 1 provides background information, the purpose of and need for the DOE and applicant actions, public scoping issues, issues outside the scope of the EIS, and EIS organization.

- Chapter 2 describes the alternatives considered in the EIS and common features of transmission line design and construction. Chapter 2 also provides a summary comparison of the environmental impacts of the alternatives and discusses measures to mitigate potential impacts.

- Chapter 3 describes the environment potentially affected by the proposed action.

- Chapter 4 discusses the potential environmental impacts of the alternatives (four alternative routes and the rescission of the Presidential permit).

- Chapter 5 identifies the unavoidable adverse impacts associated with the alternatives.

- Chapter 6 discusses significant irreversible and irretrievable commitments of natural and man-made resources.

- Chapter 7 discusses the relationship between short-term use of the environment and long-term productivity.

- Chapter 8 discusses the potential cumulative impacts of the alternatives.

- Chapter 9 identifies the major laws, regulations, and other requirements applicable to the project.

- Chapter 10 provides a list of agencies and individuals contacted during preparation of this EIS.

- Chapter 11 is an alphabetical listing of the references cited in the main text of the EIS.

- Chapter 12 lists the name, education, and experience of persons who helped to prepare the EIS. Also included are the subject areas for which each preparer was responsible.

- Chapter 13 presents a glossary of the technical terminology used in the EIS.

- Chapter 14 is a subject matter index that provides the page numbers where important terms and concepts are discussed.

- Appendix A contains copies of consultation letters regarding the preparation of this EIS that were sent to and received from Federal and State agencies and Tribes.

- Appendix B provides detailed maps showing the alternative routes and significant wildlife habitats.

- Appendix C provides supplemental hydrological information (e.g., a listing of the streams and rivers crossed by the alternative routes and lakes that occur within 1 mi [1.6 km] of the alternative routes).

- Appendix D provides a qualitative assessment of impacts on vertebrate species that occur in the project area.

- Appendix E provides the wetland and floodplain assessment.
- Appendix F provides the biological assessment for the bald eagle and Atlantic salmon.
- Appendix G provides the essential fish habitat assessment.
- Appendix H provides supplemental visual resources information (e.g., photographs and photosimulations).
- Appendix I contains the distribution list for this EIS.
- Appendix J provides the contractor disclosure statement.